

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

In the Matter of)
)
Amendment Of Part 95 Of The)
Commission's Rules To Allow)
Interactive Video And Data Service)
Licensees To Provide Mobile)
Services To Subscribers)

WT Docket No. 95-171

RM-8476

RECEIVED
JUL 6 1995
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

To: The Commission

COMMENTS OF
DISPATCH INTERACTIVE TELEVISION

Mark D. Schneider
Anne E. Gilson

SIDLEY & AUSTIN
1722 Eye Street N.W.
Washington, DC 20006

June 26, 1995

No. of Copies rec'd
List A B C D E

025

TABLE OF CONTENTS

Introduction and Summary	2
1. IVDS Licensees Should Be Able To Offer Ancillary Mobile Service To Their Subscribers.	4
2. Fixed IVDS RTUs Should Maintain Their Presently Authorized Maximum Potential of 20 Watts ERP . . .	5
3. The Commission Should Authorize Mobile IVDS RTUs To Operate With A Maximum Of 20 Watts ERP . .	10
Conclusion	14

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment Of Part 95 Of The)	
Commission's Rules To Allow)	WT Docket No. 95-47
Interactive Video And Data Service)	
Licensees To Provide Mobile)	RM-8476
Services To Subscribers)	

To: The Commission

**COMMENTS OF
DISPATCH INTERACTIVE TELEVISION**

Dispatch Interactive Television ("Dispatch") submits these Comments in response to the Commission's Notice of Proposed Rule Making ("Notice") regarding the Amendment of its current rules governing the provision of Interactive Video and Data Service ("IVDS"). Specifically, the FCC proposes to amend its rules to authorize IVDS licensees to provide mobile service on an ancillary basis. Dispatch is affiliated with the Dispatch Broadcast Group which, through its subsidiaries and affiliates, operates Station WBNS-TV, Channel 10, licensed to Columbus, Ohio, and Station WTHR, Channel 13, licensed to Indianapolis, Indiana. Through affiliates, Dispatch also holds two IVDS licenses purchased at auction, one in Columbus, Ohio and the other in Indianapolis, Indiana.

INTRODUCTION AND SUMMARY

Under the Commission's current rules, IVDS licensees may only provide their services to subscribers at fixed locations within a given service area. 47 U.S.C. §§ 95.803(a), 95.805(e). Subscriber operation of response transmitter units ("RTUs") therefore presently is restricted to fixed locations in the IVDS service area, such as private residences, places of business, and educational institutions. 47 U.S.C. § 95.805(e).

Dispatch supports the Commission's basic proposal to permit IVDS licensees to provide mobile services to their fixed service subscribers on an ancillary basis. The advent of such services will make the most efficient use of the IVDS spectrum, stimulate the creation of new services for the public, and serve as an additional source of revenue to broadcasters of interactive applications who operate in a competitive marketplace.

Dispatch, however, strongly opposes two of the possibilities raised in the Commission's Notice.¹ As to the first matter, Dispatch opposes any proposed reduction in the maximum effective radiated power ("ERP") for fixed RTUs used in the operation of IVDS systems. Any reduction of the maximum ERP for fixed RTUs currently established by the FCC's rules will

¹ These Comments are supported by the declaration of Marvin Born, attached hereto as Exhibit 1. Mr. Born is an experienced broadcast engineer who has worked in the communications industry for more than twenty years. See Born Decl. at 1.

unnecessarily limit the types of services available to the public. Born Decl. at 7. Moreover, the reduction of the maximum ERP for fixed RTUs unnecessarily will reduce greatly, if not eliminate, competition and diversity in the IVDS equipment and related services marketplace. Born Decl. at 2-3. Furthermore, any reduction in maximum ERP for fixed RTUs would work an unfair and substantial hardship on IVDS licensees who purchased their authorizations through the FCC auctions based upon a business plan that relied on a technology that incorporated a maximum ERP for RTUs of 20 watts. Finally, these harms to the public interest are not necessary given the engineering reality that underlies the current IVDS rules. See Born Decl. at 3-5.

As to the second matter, the Commission also should not limit mobile RTUs to a maximum ERP of 100 milliwatts. For technical reasons similar and in addition to the reasons that are discussed with respect to the operation of fixed RTUs, it is not necessary to mandate a maximum ERP for mobile RTUs that is less than the 20 watts ERP permitted for fixed RTUs. Born Decl. at 6-7. Any reduction in the maximum permissible ERP for mobile units unnecessarily will limit the type of equipment and operational plans that can be utilized by IVDS systems, depriving the public of certain services and the benefits of competition in the IVDS equipment and related services marketplace.² Born Decl. at 7.

² As a practical matter, EON Corporation ("EON") has petitioned the Commission to mandate a limitation of 100 milliwatts ERP so that it can effectively control the IVDS market. The IVDS
(continued...)

1. IVDS Licensees Should Be Able To Offer Ancillary Mobile Service To Their Subscribers.

The Commission should adopt its proposal to permit IVDS licensees to provide mobile services on an ancillary basis. Mobile IVDS service undeniably would benefit the public and the IVDS industry for several reasons. First, the development and use of mobile RTUs would make IVDS systems more efficient, enabling licensees to utilize their excess capacity on ancillary mobile services. Second, the advent of mobile operation would stimulate new services to be offered to consumers, including two-way paging or page answer-back, or perhaps even the delivery of longer messages including weather reports and traffic bulletins. Finally, mobile operation would add revenue to the IVDS market and stimulate its growth. Licensees using excess capacity could receive revenue to supplement the provision of new interactive service. IVDS also surely would become more marketable and appealing to consumers as a result of the added flexibility of mobile operation. Dispatch, therefore, supports the Commission's proposed amendment to Section 95.803(a) of its rules to authorize IVDS licensees to provide mobile services to their fixed service subscribers. See Born Decl. at 2.

² (...continued)

technology marketed by EON is based on a lower power transmission with base stations spaced very closely together; other IVDS technology uses higher-power transmitters spaced at greater distances. If the Commission sets the limit proposed by EON, IVDS providers would be compelled to use the technology developed by EON rather than its competitors. The 100 milliwatt ERP limitation is not necessary to protect other services from interference and thus serves only EON's interests.

2. Fixed IVDS RTUs Should Maintain Their Presently Authorized Maximum Potential Power Of 20 Watts ERP.

There is a manifest need for the Commission to retain its rule providing for a maximum power of 20 watts ERP for fixed RTUs and no need for a reduction of the maximum permissible ERP.³ See Born Decl. at 2-5. If the Commission limits the operation of fixed RTUs in IVDS systems to 100 milliwatts, IVDS licensees, and the public, will be deprived of the services and benefits from IVDS technologies that operate differently from the equipment marketed by EON. Born Decl. at 2-3. For a variety of reasons, the Commission should not reduce the maximum ERP of 20 watts authorized for fixed RTUs of IVDS systems.

As an initial matter, the Commission must understand that a reduction of the maximum permissible ERP for fixed RTUs to 100 milliwatts likely would legislatively mandate that IVDS licensees use technology comparable to the technology developed by EON even if other IVDS technologies are otherwise feasible, available and much more compatible with the business plans of those IVDS licensees. Born Decl. at 2-3. IVDS system cell sites with technology that operates at a maximum ERP of 100 milliwatts must be placed at most 4000 feet apart. Born Decl. at 3. The

³ In the Notice, the Commission did not propose to limit the operation of fixed RTUs to 100 milliwatts, but instead simply sought comment on the possibility. See Notice at ¶ 8 ("We also request comments on the need to continue to authorize 20 watts power for fixed RTUs given their apparent ability to operate at 100 milliwatts").

IVDS business plans of Dispatch and many other licensees depend upon the use of technology, such as that provided by Radio Telecom and Technology, Inc. ("RTT") and Welcome to the Future, that operates using transmitters with a higher maximum ERP (up to 20 watts) placed at greater distances apart (anywhere from one to ten miles apart). Id. Licensees such as Dispatch simply will not be able to operate their planned systems with fixed RTUs limited to 100 milliwatts.

The administrative mandating of IVDS technology by the FCC would have grave consequences for the IVDS industry. First, the public would be deprived of the benefits of a variety of services that will only be commercially viable if provided by systems using transmitters with greater geographic separation and a higher maximum ERP. Born Decl. at 7. Various licensees, including Dispatch, have purchased IVDS authorizations at auction with an intention to provide a large variety of fixed interactive services. The programming, marketing, development and roll-out costs of some of these interactive applications are based on the use, and concomitantly lower costs, of equipment that does not require IVDS base stations every several thousand feet. Born Decl. at 2-3. If the FCC's rules are now changed to limit the maximum ERP of fixed RTUs to 100 milliwatts rather than 20 watts, these applications will have to be disregarded because of the capital intensive costs of duplicating transmitting sites and equipment, with less funds available for other necessary aspects of the applications. Additionally, plans to provide service to

suburban and rural areas might be eliminated because the density of population would not support the capital intensive installation of IVDS cells. See Born Decl. at 5-6.

Second, by eliminating the incorporation of IVDS technologies that use transmitters with a higher maximum ERP, the FCC will be promoting concentration in the IVDS equipment marketplace and deterring competition and diversity of technology and service providers in the IVDS marketplace. Born Decl. at 2-3. At the present time, IVDS equipment manufacturers, system developers and programmers have a variety of options to sell to IVDS service providers and to the public. Reducing the maximum permissible ERP for fixed RTUs will limit significantly the type of equipment that can be offered, eliminating some competing types of equipment and services altogether. See Born Decl. at 5,7. With this loss of competing technology and service, the public will be deprived of the benefits of competitive prices and diversity of service offerings from IVDS systems.

Third, many IVDS licensees would be needlessly and unfairly harmed by the reduction in maximum permissible ERP for RTUs at this time. See Born Decl. at 2-3. Dispatch, for example, purchased its IVDS authorizations with the expectation that it would have an opportunity to compete in the new interactive marketplace under regulations that expressly authorized a maximum of 20 watts ERP per RTU. Dispatch, and certainly other licensees, relied on this authorized power and

designed their operations accordingly. The reduction of maximum permissible ERP to 20 watts not only would impair Dispatch's current plans for IVDS, but also likely could arrest the growth of the IVDS industry in its infancy. Currently, there does not exist sufficient data concerning the feasibility of 100 milliwatt operations to justify essentially granting an exclusive IVDS license to systems that happen to be compatible with technology developed by EON.⁴

Finally, from a technical standpoint, there is no reason to reduce the maximum ERP of fixed RTUs in order to curb unacceptable interference with reception on Channel 13. Born Decl. at 3-5. As an initial matter, many IVDS licensees operate in communities where Channel 13 is not used for television broadcasting; there can be no concern about interference in these areas. In areas where Channel 13 is available, concerns about interference already are addressed by the FCC's existing regulatory safeguards that are specific with respect to proximity to broadcast operation on Channel 13. See Born Decl. at 4.

For example, by providing for the installation of IVDS equipment with automatic transmission power control, the FCC ensures that transmitters will use the lowest necessary power.

⁴ To the extent that EON's petition for rulemaking seeks the reduction in maximum permissible ERP for RTUs used in IVDS systems, the petition is a self-interested attempt to monopolize the IVDS marketplace. There is no legitimate reason to exclude higher-powered transmitters and the related IVDS technology from the market for IVDS equipment and related services.

47 C.F.R. § 95.855.⁵ Moreover, by establishing a maximum duty cycle for RTUs that cannot exceed 5 seconds per hour, the FCC has ensured that the duration of interference, if any, will not reach unacceptable levels. 47 C.F.R. § 95.863.⁶ Furthermore, the FCC's current rules require IVDS licensees to investigate any complaints about interference and eliminate the interference within 30 days. 47 C.F.R. § 95.861(e). In order to eliminate such interference, in the unlikely event that a complaint is received, an IVDS licensee might reduce the maximum ERP of its RTUs, but the Commission does not need to mandate an industry-wide power reduction at this time. Finally, other existing services in the same area of the spectrum, including amateur radio and 220-222 MHz SMR systems, have less restrictive power limitations and regulatory safeguards to prevent interference to Channel 13 reception. Born Decl. at 7.

In sum, it would be premature for the Commission to mandate the use of one IVDS system above all others by legislating a change in the maximum permissible ERP for fixed RTUs. In its rulemaking, the Commission described its "goal of

⁵ Automatic transmission power control technology, when incorporated into the equipment of an IVDS system, ensures that the transmitters in operation will always use the minimum power necessary to permit acceptable quality communications. Thus, although the FCC's rules permit a maximum ERP of 20 watts, many communications in IVDS systems will occur with RTU transmissions at less than 5 watts ERP. See Born Decl. at 3-4.

⁶ The 5 seconds per hour maximum duty cycle includes accumulated bits of compressed transmissions, so that it is even less likely that any noticeable interference will be experienced. See Born Decl. at 4.

fostering a competitive market in IVDS communications."

Amendment of Parts 0, 1, 2, and 95 of the Commission's Rules to Provide Interactive Video and Data Services, 7 FCC Rcd. 1630, 1638 (1992). Although permitting IVDS licensees to provide mobile services on an ancillary basis will foster the Commission's goal, altering the present rules concerning fixed operations will retard that goal by preventing currently compatible and competing technologies from being rolled out into the IVDS marketplace. Born Decl. at 2-3. Given existing regulatory safeguards and technology, and where IVDS licensees have individual markets and frequency bands which will require different amounts of maximum RTU power, no regulatory change in the maximum power for RTUs is advisable or necessary. See Born Decl. at 3-5. Changing the rules at this point could delay the implementation of the wireless IVDS industry and cause it to fail. The FCC therefore should continue to authorize the present power limit of 20 watts ERP for fixed RTUs.

3. The Commission Should Authorize Mobile IVDS RTUs To Operate With A Maximum Of 20 Watts ERP.

Mobile IVDS operation should be permitted with RTUs utilizing the same 20 watt maximum ERP as fixed RTUs. For all of the same reasons described above, and other reasons, the Commission's proposal to limit the maximum ERP of mobile RTUs to 100 milliwatts is unnecessary and would deprive the public of new

beneficial services and competition in the IVDS industry. Born Decl. at 5-7.

First, if the Commission limits mobile RTUs to a maximum ERP of 100 milliwatts, all IVDS systems that want to provide ancillary mobile services could only use the type of microcell technology that is described above. See supra at 5-6. IVDS system licensees that want to provide ancillary mobile services will be required to utilize the microcell design and equipment so that mobile RTUs operating at a maximum of 100 milliwatts, with a range of approximately 2000 feet, will be able to communicate on the system. Born Decl. at 5-6. Other IVDS system technologies, such as that provided by RTT and Welcome to the Future, that utilize more powerful base stations operating at power levels up to 20 watts ERP, will have to be discarded or used with little or no mobile RTU capability. In either case, the public would be deprived of service, the spectrum would be used inefficiently, and competition in the IVDS industry would suffer.⁷

Second, for all the same technical reasons discussed above, there is no engineering need to authorize ancillary mobile service with only 20 watts maximum ERP for mobile RTUs. See supra at 8-10. The existing technology and rules governing the

⁷ As discussed above, limiting IVDS systems to the microcell technology designed by EON for mobile operation would eliminate the possibility for diverse technologies and services and would stifle competition. See supra at 5-7.

operation of fixed RTUs, including the availability of automatic transmitter power control and the limited maximum duty cycle, also will provide protections for mobile transmissions.⁸ Born Decl. at 6. Moreover, even if the maximum duty cycle of 5 seconds per hour was not applied to mobile operation, the movement of the mobile unit will reduce the potential for unacceptable interference to any individual receiver because of the fleeting nature of the transmission location. Born Decl. at 6-7. Finally, other existing mobile services in the same area of the spectrum, including amateur radio and 220-222 MHz SMR systems, have less restrictive power limitations and regulatory safeguards to prevent interference to Channel 13 reception. Born Decl. at 7.

Third, there exists a significant possibility that the proposed 100 milliwatt ERP limit is not feasible from a commercial perspective. Suburban and rural areas are quite unlikely to be served by microcell technology. Because transmitters for cell sites must be placed at most 4000 feet apart when RTUs operate with a maximum ERP of 100 milliwatts, such extensive capital outlays in areas where populations are relatively sparse are unlikely. Born Decl. at 5-6. While IVDS

⁸ Present regulations already provide for automatic transmit power control; therefore, the mobile RTUs will automatically use the minimum amount of power necessary to communicate data. 47 C.F.R. § 95.855. Each subscriber unit also may only be accessed for 5 seconds per hour, according to current Commission regulations. 47 C.F.R. § 95.863. The Commission has recognized that a 5 second per hour limit on mobile operations would protect reception of Channel 13. Notice at ¶ 9.

licensees might attempt to serve more densely populated areas, downtown areas may require cell sites even closer together because of building heights, architectural designs and other environmental factors. Born Decl. at 6. In order to provide the fledgling wireless IVDS industry an opportunity to develop and survive, the FCC should not artificially limit the maximum ERP of its RTUs at this time.

CONCLUSION

When the FCC first authorized IVDS services, after having "thoroughly evaluated" the issue of interference, it concluded that spectrum allocation would not disrupt or interfere with Channel 13 operations in the lower adjacent band. Report and Order, 7 FCC Rcd. at 1630, 1632. For the reasons discussed above, the Commission should amend Part 95 of its rules to permit the provision of ancillary mobile services to fixed IVDS subscribers. The Commission also should establish a 20 watt maximum ERP for mobile RTUs and retain the 20 watt maximum ERP for fixed RTUs operating in IVDS systems.

Respectfully submitted,

DISPATCH INTERACTIVE TELEVISION

By: *M. D. Schneider*

Mark D. Schneider
Anne E. Gilson

SIDLEY & AUSTIN
1722 Eye Street N.W.
Washington, DC 20006
(202) 736-8000

Dated: June 26, 1995

DECLARATION OF MARVIN BORN

I, Marvin Born, do hereby declare and state as follows:

I am Vice President of Engineering of the Dispatch Broadcast Group. The Dispatch Broadcast Group, through affiliates, presently operates two television stations: Station WBNS-TV, Channel 10, licensed to Columbus, Ohio, and Station WTHR, Channel 13, licensed to Indianapolis, Indiana. The Dispatch Broadcast Group also is affiliated with Dispatch Interactive Television ("Dispatch"). Through affiliates, Dispatch has purchased at auction IVDS licenses for Indianapolis and Columbus.

I have served in an engineering capacity with the Dispatch Broadcast Group for approximately seven years. I hold the following degrees: a Bachelor of Science in Broadcasting from West Virginia University and a Masters of Business Administration from what is now Texas A&M at Corpus Christi. Prior to my seven years of service with the Dispatch Broadcast Group, I served in a similar engineering capacity with Gulf Coast Broadcasting for approximately twelve years. Over the past twenty years I have gained extensive experience in television broadcast radio frequency technology and the operation of multiple transmission sites.

Dispatch supports the proposal of the Federal Communications Commission (the "FCC" or the "Commission") to authorize the provision of mobile service by IVDS licensees on an ancillary basis. From an engineering standpoint, however, the Commission should retain its rule authorizing a maximum of 20 watts effective radiated power ("ERP") for fixed response transmitter units ("RTUs") and, similarly, should authorize a maximum ERP of 20 watts for mobile RTUs.

Fixed IVDS Service.

From a technical perspective, there are several reasons to maintain the 20 watt ERP maximum for fixed RTUs in the IVDS service, and no reason to limit the power.

First, if maximum power for fixed RTUs is limited to 100 milliwatts, the options of Dispatch and other licensees for the construction and development of systems would be extremely limited. IVDS licensees would be required to purchase technology like that developed by EON, which would be prohibitively costly to Dispatch and similarly situated licensees. EON's system requires numerous microcells, and, depending upon the environment involved, EON's microcells operating with a maximum ERP of 100 milliwatts have a range of approximately 2000 feet. Giving adequate consideration to terrain, building location, architectural conditions, and the type of antenna structures

involved, IVDS cell sites under the system proposed by EON would have to be placed at a maximum of 4000 feet apart for the system to be functional.

In contrast, Dispatch's business plan depends upon a technology and system that relies on a greater ERP from each transmitter, using fewer transmitters placed further apart. Radio Telecom and Technology, Inc. ("RTT") has developed such a technology and system, which is compatible with Dispatch's plan. Depending upon the environment, more powerful transmission facilities used by systems like that designed by RTT, relying on a maximum ERP of 20 watts, have a range of 10 miles. This requires fewer cells, and is more compatible with the systems and business plans of Dispatch and the systems of other licensees like Dispatch.

Second, the Commission's main technical concern in authorizing IVDS systems was that the IVDS systems not cause unacceptable interference to other services, specifically television broadcast stations operating on Channel 13. While limiting transmission power is one method of reducing interference, there is absolutely no need to restrict fixed RTU power in the IVDS service to 100 milliwatts ERP because automatic transmission power control is already provided for in the Commission's regulations. Automatic transmission power control incorporated in each RTU ensures that the transmitters will use the lowest possible power necessary to communicate with an IVDS

base station. The Commission, then, already effectively restricts power to reduce interference by the use of "state of the art" technology; IVDS services use only the power they need, which may be 100 milliwatts or up to 20 watts.

As an additional interference safeguard, the Commission currently requires that the maximum duty cycle of RTUs in the IVDS systems not exceed 5 seconds per hour. This limitation does not in practice mean 5 seconds of information will be sent at a time; instead, it is a series of millisecond short data bursts, reducing noticeable interference. With service limited in this manner by the current FCC rules, there is no need to reduce the maximum ERP of fixed RTUs to avoid interference that is not anticipated to be problematic.

Finally, the purpose of the Commission's limit on power is to protect reception on Channel 13. In communities that do not receive television service on Channel 13, there is clearly no reason to reduce the maximum ERP for fixed RTUs from 20 watts because there will be no interference. The Commission clearly does not need to concern itself with IVDS operation outside of the grade B signal contour of stations operating on Channel 13. The FCC's current IVDS rules already contain power restrictions based upon the distance of IVDS transmitters from operating television Channel 13 transmission sites.

In summary, any potential problem with fixed RTU interference to Channel 13 can be solved by using the existing IVDS regulations and not by reducing the maximum permitted ERP for fixed RTUs. The Commission currently requires an IVDS licensee to investigate complaints of interference to local television reception and correct the interference. Given the technical parameters discussed above, limiting the maximum ERP to 100 milliwatts will not significantly add to the mechanisms in place to arrest interference.

Mobile IVDS Service.

The Commission should authorize a maximum ERP of 20 watts for mobile RTUs for several technical reasons, similar to the reasons for maintaining 20 watts at the maximum ERP for fixed RTU services. First, if the Commission adopts EON's proposal, all IVDS systems proposing to provide mobile service on an ancillary basis would have no choice but to use the type of technology proposed by EON. Higher-power transmission systems using technology developed by RTT, the only type of system compatible with Dispatch's business plan, will be unable to operate with a maximum ERP of 100 milliwatts. These IVDS systems will not be able to provide effective and efficient ancillary mobile services.

Second, EON's proposal would simply not be technically feasible in some areas. If cells must be placed every 4000 feet,

IVDS licensees will be forced to serve primarily densely populated areas because those will be the only service areas that are cost effective. Less heavily populated areas like suburban and rural areas likely would not be served because placing cells every 4000 feet would be unduly capital intensive and unlikely to generate sufficient revenue to justify the capital investment.

Additionally, a maximum ERP of 100 milliwatts often will be unacceptable to provide service in downtown areas. In downtown settings, with the reduced maximum ERP, tall buildings would require more microcells even closer together for an IVDS system to function. Obstructions from buildings and other architectural problems would require placement of cells every few thousand feet.

Third, as discussed above, the Commission's concern about interference with other systems is already addressed in its current IVDS regulations. Automatic transmission power control, already mandated in the Commission's regulations for fixed IVDS systems, ensures that mobile technology will use the lowest possible power. The maximum duty cycle of 5 seconds per hour similarly is a sufficient mechanism for eliminating unacceptable interference.

Fourth, there is no need to reduce potential interference with Channel 13 reception by mandating a maximum ERP of 100 milliwatts because any interference from mobile units

would necessarily be fleeting. Whether or not the 5 second per hour duty cycle limit applies to mobile services, the movement of mobile RTUs will vary the sites of transmission, reducing even further the remote possibility of any noticeable interference. Other mobile and fixed services recently authorized by the Commission in this area of the spectrum have no such time limit for transmission and less restrictive power limits. For example, Specialized Mobile Radio ("SMR") in the 220 to 222 MHz range is a new industry operating with a less restrictive power limitation, and is only 2 MHz away from where IVDS is on the spectrum. Also, amateur ham radios with fixed point to fixed point operation in the 219 MHz band have a limitation of 50 watts power output and no time restrictions. Above the 220-222 MHz band, amateur ham radios are authorized at 1500 watts peak effective power.

Finally, reducing mobile RTUs in IVDS systems to a maximum ERP of 100 milliwatts would make the systems less flexible in terms of development and use of new processes. While some hand-held mobile RTUs would need only 2 to 5 watts ERP to operate, a regulation limiting power to that low level would foreclose the technical possibility of other innovative processes. For instance, another possible type of ancillary business for mobile IVDS in the future is data transmission of the type currently used by law enforcement agencies and emergency vehicles. A 100 milliwatt maximum ERP will stifle this technology because of the short, 2000 foot range of transmissions.

The foregoing declaration is true to the best of my knowledge, information, and belief.

MARVIN BORN